

# Truckee Meadows Flood Control Project

## December 2004 Newsletter



US Army Corps  
of Engineers



### F4 - Alternative Review Conference

You may have heard talk about the Corps meeting an “F4 Milestone” in January and wondered what it was, who else is involved, who will attend, where it is, and when...

The F4 Alternative Review Conference is one of ten milestones that are a part of the Corps civil works feasibility study process. Completion of all the milestones culminates in the signing of the Division Engineer’s Public Notice that moves the project from the Division level to the Corps Headquarters (HQUSACE). At HQUSACE a Chiefs Report is prepared that recommends the project for further consideration, which is first to the Office of Management and Budget (OMB), and then ultimately to Congress for authorization.

At the F4 Conference a final set of potential alternatives will be presented and it will be determined if the evaluations performed are adequate to select a recommended plan and the National Economic Development/National Ecosystem Restoration (NED/NER) plan. Additionally, the evaluation criteria and process that was used to arrive at the alternatives will be presented. Problem identification, impact analysis, benefit analysis, selection criteria, and the issue of Federal interest in continuing to pursue the project will also be reviewed. Also discussed will be the local sponsor’s ability to pay and the status of the Environmental Impact Statement (EIS) including cultural resources evaluation and fish and wildlife mitigation. Finally, policy issues will be identified that may be of concern for the subsequent milestone conference (known

The NED/NER (or Combined Plan) is a multi-purpose plan that combines flood damage solutions with ecosystem restoration.

as the Alternative Formulation Briefing or AFB) The requirements for the F4 Milestone Conference are set out in CESP Regulation No. 1110-1-8 Quality Management Plan, Appendix C, Enclosure 2 (20 September 2004).

The F4 Conference is an internal Corps meeting and will not be open to the general public. Members of the Corps Project Delivery Team (PDT), members of the District Support Team (DST) from the Corps South Pacific Division, members of the Independent Technical Review (ITR) team, and other invited persons will attend. The meeting will be held at the Corps Sacramento District office on January 26<sup>th</sup> from 0900 to 1600.

### Detention Basins Exposed

Just what is a detention basin? A detention basin is an impoundment or excavated basin for the short-term detention of storm water runoff followed by a controlled release. Most persons have seen the bowl shaped portion of your local large parking lot and the gated outlet at the bottom of the bowl. This bowl captures the peak runoff of the rainstorm, detains it briefly, and then passes the water at a controlled rate into the local storm water system. A flood control detention basin operates on this same principle but with much larger area (up to hundreds of acres) and is designed to contain peak storm upstream inflows. The release rates through the outlet structure are intended to prevent downstream channel capacities from being exceeded.

The general layout of a detention basin includes the following: a dam that is either an earthen embankment or concrete monolith; an outlet structure that is comprised of either operable gates or pipe conduit to release a pre-determined maximum flow; and an emergency spillway to pass water from events which exceeds the design

capacity of the basin. The area behind the dam is dry except in periods of storm runoff.

Detention basins may also be impoundments created by the construction of levees or dikes to contain water diverted from a river or large stream at a high stage during a flood event. Design considerations for detention basins include but are not limited to: seepage control, foundation strength conditions; and the percentage of contributing watershed area that is controlled. The question to be answered is: is a significant portion of the watershed runoff being controlled or, is the runoff bypassing the site under consideration?

The formulation of flood damage reduction alternatives for the Truckee Meadows Flood Control Project has included consideration of detention basins at a number of sites along the Truckee River and along its tributaries. Many areas are unusable because they simply do not afford the opportunity to impound enough storm water before that water impacts adjacent significant development, transportation routes, etc.

Currently, there are three areas that have been retained for further consideration for the flood control project. These sites are Huffaker Hills, Mustang Ranch and the UNR farms area. The Huffaker Hills site is located along Steamboat Creek, approximately 5 miles upstream of its confluence with the Truckee River and will impound flows generated by the Steamboat Creek watershed. The Mustang Ranch site is located just downstream of the community of Lockwood and will be an impoundment of peak flows diverted from the Truckee River at high water stage. The Corps is taking a second look at other potential detention basin locations downstream of Vista in response to comments received from residents of the area. The UNR farms area is also being considered for an impoundment of peak flows to be diverted from the adjacent Truckee River, just downstream of McCarran Boulevard.

The size of the impoundments, the maximum release rates, and other design considerations are

currently being optimized along with other elements (e.g., levees, floodwalls, etc.) of the flood damage reduction plans. The primary design objective is to construct the most efficient impoundments that impact the least amount of area and maximize reducing the peak floodwater elevations in the Truckee Meadows and downstream locations.

## **Cultural Resources Update – Programmatic Agreement**

The Truckee Meadows cultural resources staff is developing a programmatic agreement (PA) to take into account adverse effects that may occur as a result of construction of the flood control project. The PA is a document that specifies through stipulations what course of action the Corps will take to be in continued compliance with Section 106 of the National Historic Preservation Act (NHPA). PA's are developed when a federal agency's project may have a long-term build out, and the impacts to cultural resources are not yet known.

The PA is basically an agreement between the federal agency and the State Historic Preservation Officer. Other interested special interest groups are invited to participate in the process. They are known as concurring parties, whereas, the Corps and the SHPO are the signatories. The outside parties that are being invited to participate in the process are the cities of Reno and Sparks, Washoe County, Storey County, The University of Nevada - Reno, the Washoe Indian Tribe of California and Nevada, and the Pyramid Lake Paiute Tribe.

Thus far, Corps team members met with the Storey County Board of Commissioners regarding the draft PA on November 4<sup>th</sup>. On Monday December 7<sup>th</sup>, two members of the Storey County Commissioners gave the Corps team a tour of known cultural resource sites on the downstream portion of the Truckee River which flows through Storey County. On December 8<sup>th</sup>, the Board of Commissioners voted to participate in the PA process as consulting parties.

The draft PA has been revised in consultation with the Office of Historic Preservation in Nevada. Very soon it will be circulated to the prospective concurring parties with a request for comments within 30 days. We anticipate execution of the PA by early Spring 2005. As soon as the District Engineer and the State Historic Preservation Officer sign the PA, the Corps will be in compliance with Section 106 for the Truckee Meadows Flood Control Project.

The cultural staff has begun to conduct a pedestrian survey of the area of potential effects (APE) for the proposed project. We are still in the process of acquiring rights of entry to various properties to conduct the survey. Weather permitting, the cultural resources surveys are expected to be concluded in late winter or early spring.

If historical, prehistoric, or ethnographic cultural materials are found during the survey, they will need to be evaluated for the eligibility toward listing in the National Register of Historic Places. In some instances, the eligibility potential of a cultural resource can be determined either from archival information or its size and perceived complexity. If eligibility cannot be determined, then subsurface investigations would be required to recover enough data to make the determination. However, prior to initiating subsurface investigations, the Project Manager will be notified, who will in turn determine if it can be avoided, incorporated into the project, or the project can be redesigned around the discovery area. Otherwise, mitigation options will be negotiated with the SHPO and concurring parties on the PA. The property owner will be contacted regarding access to the discovery for excavation and recording, or other actions that may be required to fulfill the requirements of Section 106 of the NHPA.

### **The Project Delivery Team Roles and Responsibilities – Engineering**

The Corps employs a wide range of engineering disciplines and specialists in order to develop the

flood control project alternatives, and eventually, the plans and specifications for the final project plan. **The Corps' engineering team consists of hydrologists, hydraulic engineers, geologists, soils engineers, civil engineers, structural engineers, landscape architects, environmental engineers and cost engineers.** Each discipline plays a specific role on the Truckee Meadows Flood Control Project.

The **hydrologist** develops the numerical models to estimate the watershed runoff for frequent and very rare events. This is based on a number of years of historical stream flow records within the Truckee River basin. The **hydraulic engineer** develops the digital (and/or physical) stream flow models to approximate the passage of these ranges of flows along the river and its tributaries. From these models, flood plains and water surface elevations resulting from a 100-year event (an event that has a 1% chance of occurring in any one year) are generated for both the pre-project (existing) and post-project conditions.

The **geologists** and **soils engineers** conduct explorations of the riverbank and flood plains and areas that may be considered for dams, levee embankments, detention basins, and the like. The purpose of the explorations is to estimate the foundation strengths of the underlying soils, determine seepage control concerns, etc. The **civil engineer** designs the site layouts of the recommended flood damage reduction features based on the hydrology, hydraulics and soils design recommendations. He or she also coordinates the site layouts with the designs recommended by the **structural engineers** for floodwalls, closure structures, etc. The civil engineer also prepares the quantities and real estate requirements upon which the cost estimates provided by the **cost engineers** are based upon. The **landscape architect** designs the recreational and ecosystem restoration features of the project and prepares quantities and real estate requirements that the **cost engineers** use to develop estimates. The **environmental engineer** assesses the project area for the presence of hazardous, toxic, and radiological wastes.

The Engineering team coordinates all of the above efforts with the other disciplines of the PDT including Real Estate, Environmental, and Planning and Economists to develop a range of alternatives and evaluate them against Corps criteria and one another to determine to the most economically and environmentally efficient plan for the project area.

### **Making Contact**

Visit our website at:

[www.spk.usace.army.mil/projects/civil/truckee\\_meadows](http://www.spk.usace.army.mil/projects/civil/truckee_meadows)

Your questions and comments on the contents of this newsletter are welcome. Please contact us at the following e-mail address:

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Or by post at:

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**The  
Corps PDT  
Wishes You and Yours a  
HAPPY HOLIDAY SEASON  
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